

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 September 2005 (29.09.2005)

PCT

(10) International Publication Number
WO 2005/090613 A1

(51) International Patent Classification⁷: **C21B 11/00**,
13/00, F27B 1/10, 3/10, F27D 23/00

(21) International Application Number:
PCT/AU2005/000390

(22) International Filing Date: 17 March 2005 (17.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004901418 17 March 2004 (17.03.2004) AU
2004901688 29 March 2004 (29.03.2004) AU

(71) Applicant (for all designated States except US):
TECHNOLOGICAL RESOURCES PTY LIMITED
[AU/AU]; 55 Collins Street, Melbourne, Victoria 3000
(AU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **IONS, Philip,**

James [AU/AU]; 18A Moness Street, Shelley, W.A.
6148 (AU). **HAYTON, Mark** [AU/AU]; 3 Walter Close,
Bateman, Western Australia 6150 (AU).

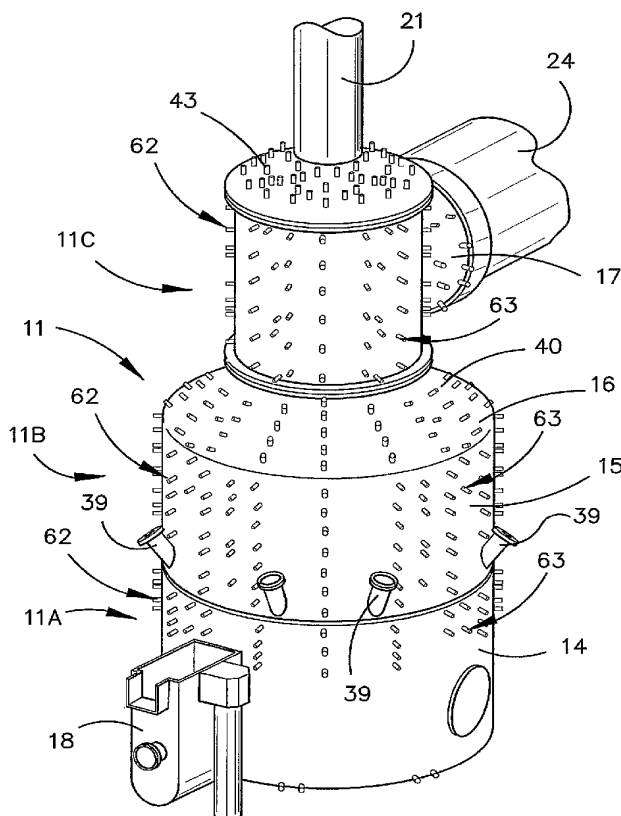
(74) Agent: **GRIFFITH HACK**; Level 3, 509 St Kilda Road,
Melbourne, Victoria 3004 (AU).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,
ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: DIRECT SMELTING PLANT



(57) Abstract: Method of constructing and installing a
direct smelting unit comprising a smelting vessel (11).
The vessel is prefabricated off site in three modules (11A,
11B, 11C) which are then transported to the installation
site where they are hoisted by a crane and deposited se-
quentially on top of one another and joined together by
welding to form a unitary vessel. The vessel modules are
prefabricated so as to be internally lined with water cool-
ing panels connected to water inlet and outlet connectors
(62) on the exterior of the circumferential wall sections
of those modules. A vessel access tower is formed in
modules brought together to envelop the tower and car-
rying water supply and return piping which is connected
to the water inlet and outlet connectors (62) of the cool-
ing panels.

WO 2005/090613 A1



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*